Introduction to the NIEM Practical Implementer's Course

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Overview

- Welcome
- Opening comments
- Introduction of presenters
- Agenda review
- Logistics
- Questions

In This Section Students Will

- State what the National Information Exchange Model (NIEM) is and is not
- Problems the NIEM solves
- Learn about design, structure, and related components
- Explain the NIEM life cycle
- Learn what technical assistance and training resources are available for NIEM-based projects

Vision for NIEM

- NIEM will be the standard, by choice, for government information exchange
- Scope is cross-government
- Business-driven focus on data layer interoperability
- Widespread reuse of information exchanges to reduce cost and improve interoperation
- Championing innovation in information exchange

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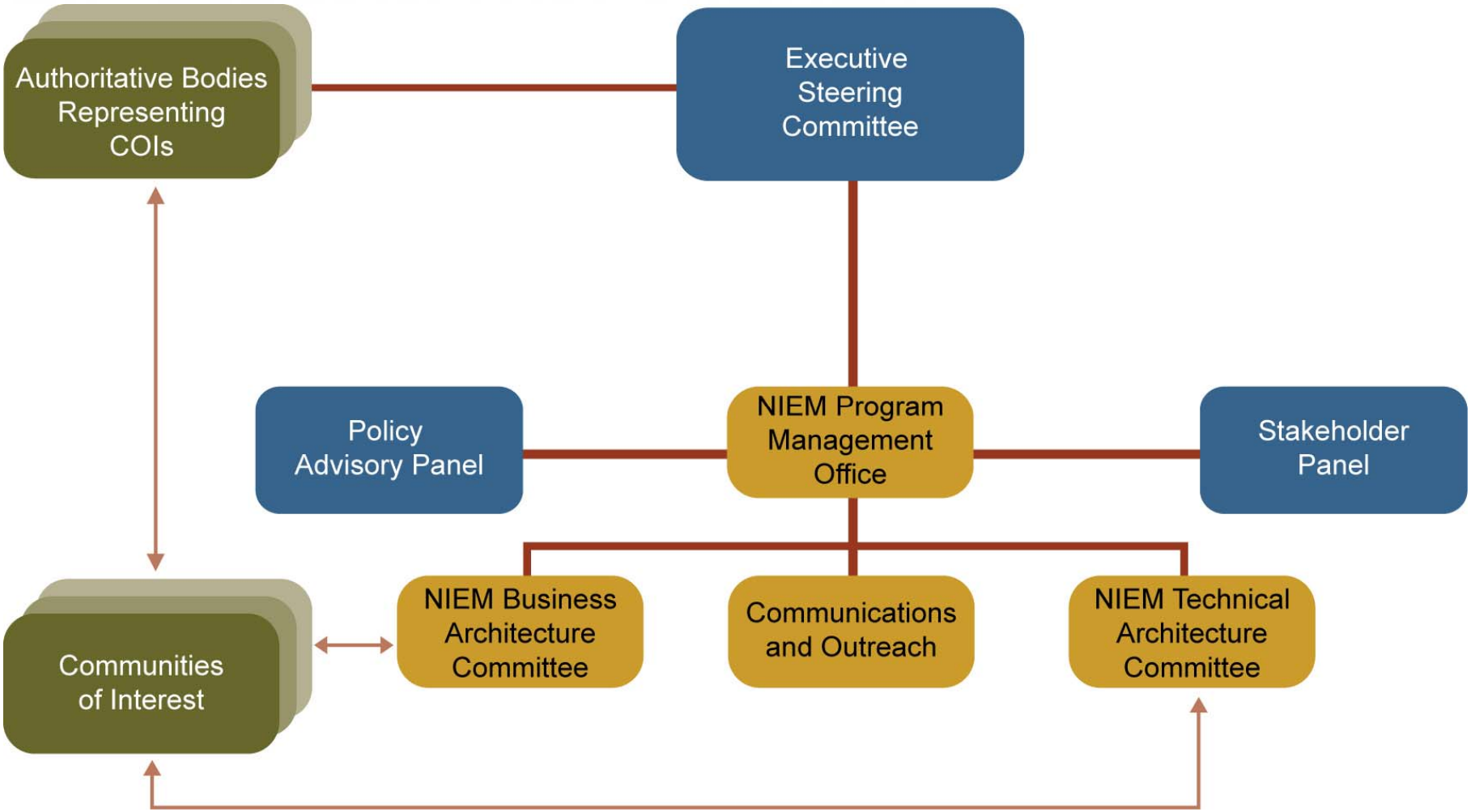


Representation on the NBAC

- Global Information Sharing Network
  - State, Local & Federal Law Enforcement
  - Corrections, Probation & Parole
  - Courts
- Industry
  - IJIS Institute
  - EIC Consortium
- Environmental Protection Agency
- U.S. Department of Homeland Security
  - Disaster Management
  - National Incident Management System
- OASIS
- Federal CIO Council
- Intelligence Community
- U.S. Department of Justice
- Emergency Services
  - Fire
  - EMS

Overview of the NIEM

What is the NIEM?

- The NIEM, or National Information Exchange Model, is a large-scale, object-oriented data model with extensive inheritance, instantiated as XML Schema; composed of reusable components (~4000 data elements and ~650 data types); and designed to facilitate disparate government and private entities in exchanging information quickly, accurately, and reliably

What the NIEM *REALLY* is

- A data dictionary and reference model in the form of an XML Schema
- A framework that can be adapted/extended by local, state, tribal, and federal jurisdictions to support information sharing
- A work in progress
- Intentionally overinclusive

What the NIEM is NOT

- Database technology
- Just XML—it is a set of objects and their definitions
- Only Federal
  - Includes many other communities at all levels of government
- A programming language
- A silver bullet
- A replacement for exchanges and interagency agreements, which must still be defined
- A definition of interoperability (messaging, etc.)

What Do You Need to Succeed With NIEM?

- Governance
- Tools
- Training
- Resources
- Follow best practices
  - NIEM
  - Software development
  - Domain-specific

NIEM Design

- Standards-based
- Structured data dictionary
  - Represented by XML Schema
- Object-oriented
  - Extension
  - Reuse
  - *Enables local additions of data components*
- Overinclusive and optional
- Requirements, solutions, and time constraints form rational compromises

Changes Accumulate

- Multiple version tracks maintained
  - Compatible changes are released in minor versions
  - Incompatible changes are accumulated for infrequent major releases
- This does not address governance of the Data Model
  - NBAC and NTAC determine when
    - Minor versions are released (frequently)
    - Major versions are released (infrequently)

What Is an Exchange and Why Should I Care?

- Transferring information between two independent systems
- Examples from your community

Potential Barriers to Using the NIEM

- The NIEM is a big compromise—everyone will find one or more things they do not like about it
- Different from what many people are used to
- It is big and complex
- Limited tools, training, and understanding can be confusing
- Often seems more difficult than what you would come up with on your own to implement a particular exchange
- NIEM-specific tools are in their infancy
- NIEM learning curve may be inconsistent with project timeline and cost

Several Resource Web Sites

- Resources for
  - Integration efforts
  - Integration profiles
  - Best practices
  - Funding approaches
  - System descriptions
  - Telecommunications approaches
  - Model integrated systems
- www.niem.gov
- NIEM Helpdesk http://it.ojp.gov/gjxdm/helpdesk
- www.ijis.org

Technical Assistance Sources

- NC&OC (NIEM Communications & Outreach Committee)
  - NIEM Executive Briefing
  - NIEM Implementers Training
- National Information Sharing Standards Help Desk
- Technical Assistance
  - IACP/TTAP
  - IJIS Institute
  - NCSC
  - NGA
  - NLECTC
  - SEARCH

NIEM Training

- Regional focus
- Class size of 40–100
- New format focused on
  - Basic knowledge of NIEM
  - Tools
  - Information exchanges

NIEM Conformance

- DOJ Special Conditions Language
  - Requires conformance with the NIEM
- DHS Special Conditions Language
  - Mirrors the DOJ language
- DOJ-DHS Memorandum of Understanding
- Executive Order 13356, replaced by E.O. 13388 (October 25, 2005)
  - Establishes an Information Systems Council
  - Focus on information sharing and interoperable systems

Semantic Conformance

- What do we mean by **conformance**?
  - Conformance means the ability to share accurate and reliable information using the NIEM such that the information has **the same** meaning for the sender as it does for the receiver

Technical Conformance

- Import and reference NIEM namespace or a correct subset
- If it exists, use the appropriate NIEM component (i.e., do not create a duplicate of one that exists)
- Be semantically consistent
  - Use NIEM components in accordance with their definitions
  - Do not use an element to represent data other than what its definition describes

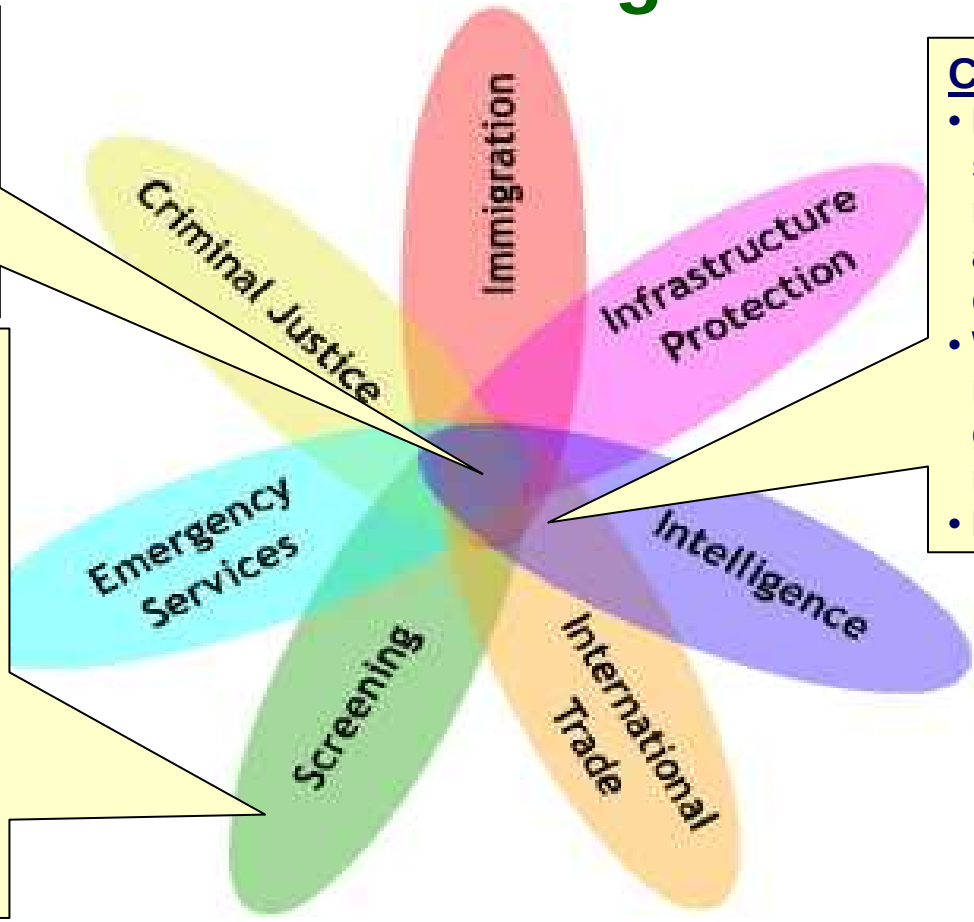
Technical Conformance (continued)

- Apply XML Schema extension rules correctly and consistently
  - Naming and Design Rules (NDR)
- Exchanges conform, NOT systems
  - What you call data or how you use it in your own system does not impact conformance
  - What counts is how you package data as XML for exchange
- There is no concept of partial conformance

National Information Exchange Model (NIEM)

Universal:
- Minimally supported set of items for all participating domains
- Universally understood
- Very stable

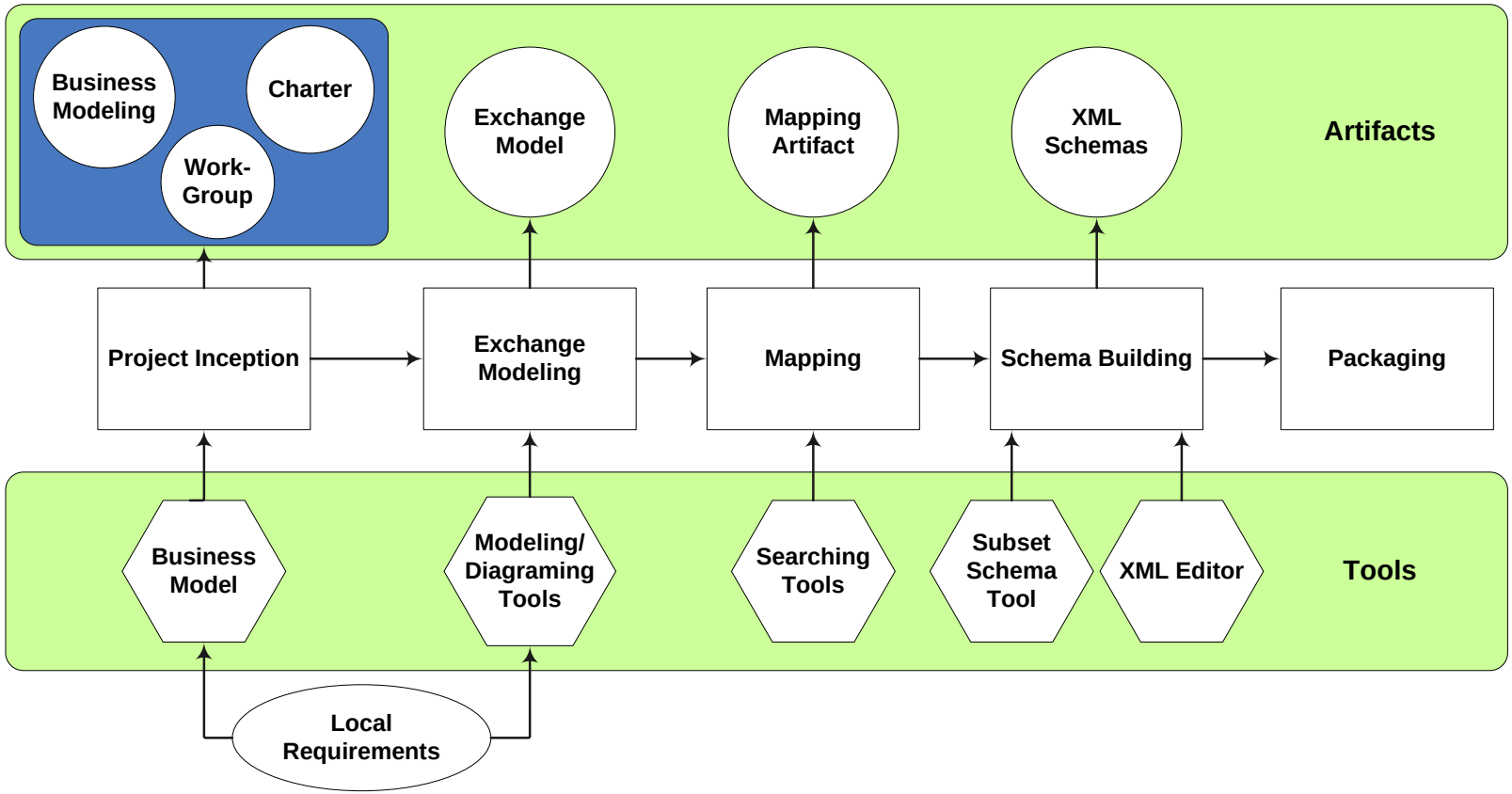
Domain Specific:
- Items with semantic meaning only in its domain
- Domain governing body:
  - Has representation on NBAC
  - Recommends content into domain or core via NBAC
  - Conforms to NIEM NDR
  - Follows NIEM governance policies & procedures



Common:
- Items with same semantic meaning shared across several domains
- With Universal, requires joint governance & reconciliation
- Relatively stable

Universal + Common = NIEM CORE

IEPD Development Lifecycle



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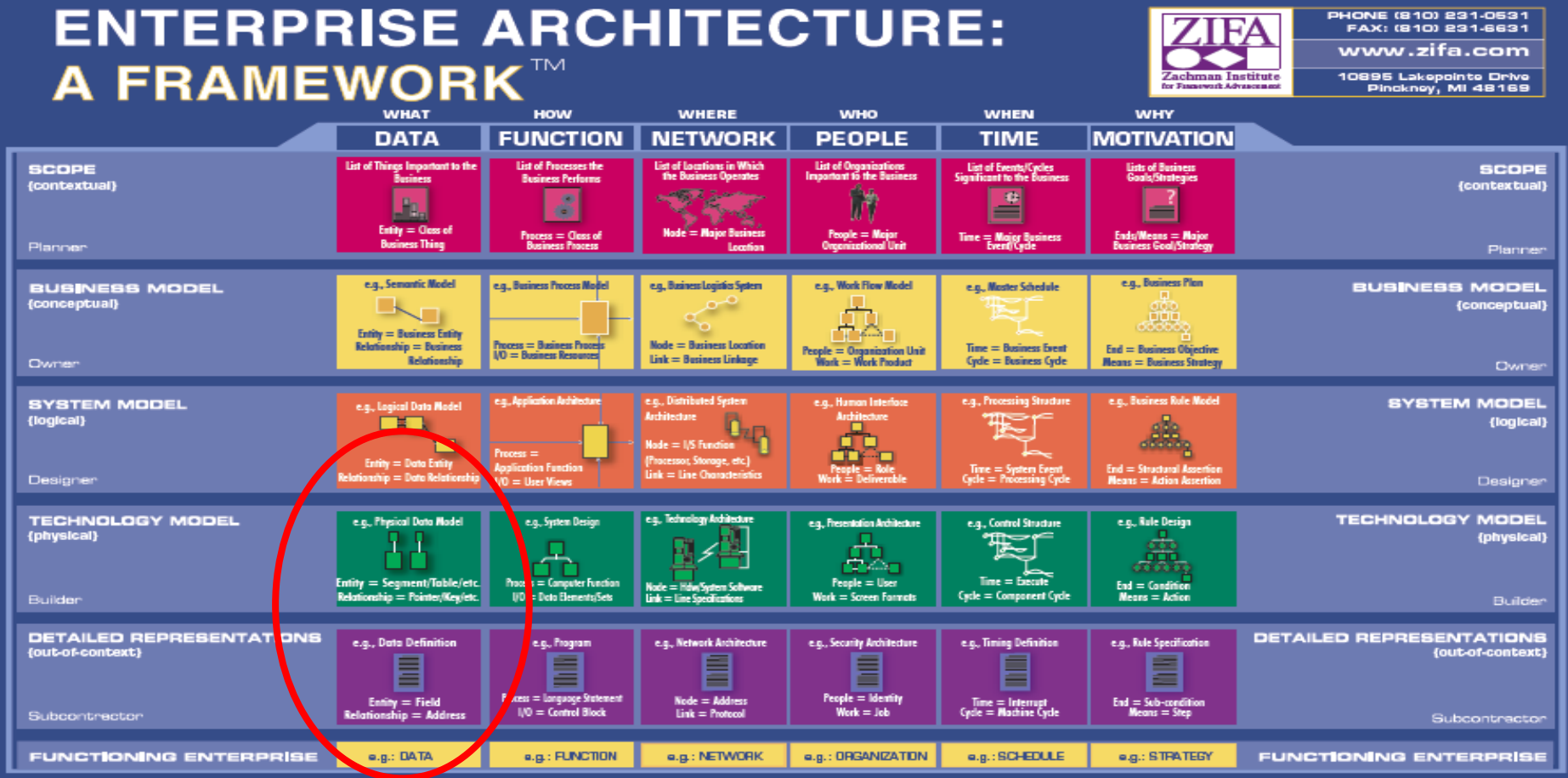

Summary